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WEB-CENTRIC DESIGN AND ENGINEERING TECHNOLOGIES, INTEGRATION METHODS AND OPTIMIZATION OF ENGINEERING-TO-PROCUREMENT BUSINESS PROCESS SUPPLY CHAIN.

Abstract:

A system and a method for integrating design/engineering-to-procurement business process supply chain are provided. A buyer/user can access the technologies to perform design calculations using dynamic, real-time market data, and proceed to procure the selected equipment. A seller/user can list equipment and services on the system, and provide necessary data for design and engineering and transactions. A seller can also access and use technologies. A database consisting of technical and financial data specific to this fully integrated system is provided. The system is web-centric and can be accessed via the Internet or on local intranets. The system provides links to back offices systems, external catalogs, external marketplaces, and other services such as financial and fulfillment. A design methodology that integrates the engineering calculations with optimization of equipment selection based on dynamic market data is presented using a gas pipeline example. A new reliability based method for equipment design, which uses specific probabilistic material data from the marketplace is provided. This method also provides optimization methodology, which combine technical and financial data to obtain risk weighted optimal results.